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Bonneville Power Administration

Record of Decision for the Buckley-Summer Lake 500-kV Transmission System in Central Oregon

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Decision Summary

The Bonneville Power Administration (Bonneville), in accordance with the procedural requirements of the National Environmental Policy Act (40 CFR Part 1505), has decided to build the proposed 156-mile, 500,000-volt (500-kV) Buckley-Summer Lake transmission line. Bonneville will also develop terminal facilities, identified as Buckley and Summer Lake Substations, at both ends of the new line. Bonneville will consequently operate and maintain these facilities in a manner which assures reliable service to its customers.

Background

Bonneville, under the provisions of the Bonneville Project Act of 1937 and the Federal Columbia River Transmission System Act of 1974, has conducted power marketing and power flow studies in order to identify facilities which would facilitate the transfer of power from the Federal Columbia River Transmission System (FCRTS) to Bonneville's customers in southern Idaho and Utah. The Buckley-Summer Lake transmission line is the initial phase of a two-phase plan of service which, through interconnections with transmission lines of the Idaho Power Company (IPC) and Pacific Power & Light Company (PP&L), will serve this objective. This plan will also allow power generated in Wyoming to be delivered to the Pacific Northwest, including southwest Oregon; it will reinforce the existing Pacific Northwest-Pacific Southwest Intertie within the State of Oregon, and it will provide additional transmission capacity which can be utilized for wheeling services and other power transactions in the region.

The second phase of the plan of service involves the installation of a 500-kV transmission line between the Idaho Power Transmission System and Bonneville's system in eastern Oregon. This line is proposed for the late 1980's and will be discussed in a separate location phase environmental impact statement (EIS).

As the proposed action was considered likely to have a significant effect on the environment, Bonneville prepared an environmental impact statement. A tiered EIS procedure was followed. The Buckley-Summer Lake transmission line was initially discussed within a draft and final planning level EIS DOE/EIS–0005–FS–2). This EIS discussed the need for the project, several alternative electrical system plans by which these needs could be satisfied, and the probable environmental impacts of these alternatives. The final planning level EIS was filed on September 24, 1979, and served as a basis for Bonneville's decision to include the project in Bonneville's Congressional Budget for the Fiscal Year 1979 program and the decision on which electrical plan was preferable.

Following completion of the planning phase EIS (DOE/EIS–0005–FS–2), a location phase EIS (DOE/EIS–0050–FS) was prepared for the Buckley-Summer Lake line. This EIS provides a more detailed, site-specific analysis of environmental impacts, and alternative transmission line designs as well as operation and maintenance impacts. The title of Bonneville's location phase EIS is as follows:

Final Supplement—Final Environmental Impact Statement, Bonneville Power Administration, Proposed Fiscal Year 1979 Program, Facility Location Supplement, Southwest Oregon Area Service Buckley-Summer Lake 500-kV Line, U.S. Department of Energy, July 25, 1980.

Following discussions further describe Bonneville's decisions for the Buckley-Summer Lake project. Upon filing in the **Federal Register** this record of decision will be distributed to all agencies, organizations, and public who were on the official project mailing list.

Description of Decisions

BPA will build a 156-mile 500-kV transmission line extending in a north-south direction through Central Oregon (Attachment 1). The line will begin at the intersection of four existing BPA 500-kV transmission lines, 10 miles east of Maupin, Oregon, in Wasco County. From this point the line, which is adjacent to the east side of two existing 500-kV transmission lines, will extend south through Jefferson, Crook, and Deschutes Counties, to its southern terminus in Lake County, Oregon. The southern terminus is located about 10 miles south of Oregon State Highway 31 at the intersection of PP&L's Midpoint-Malin 500-kV transmission line (under construction) and the BPA and Portland General Electric (PGE) 500-kV AC Intertie lines near Summer Lake.

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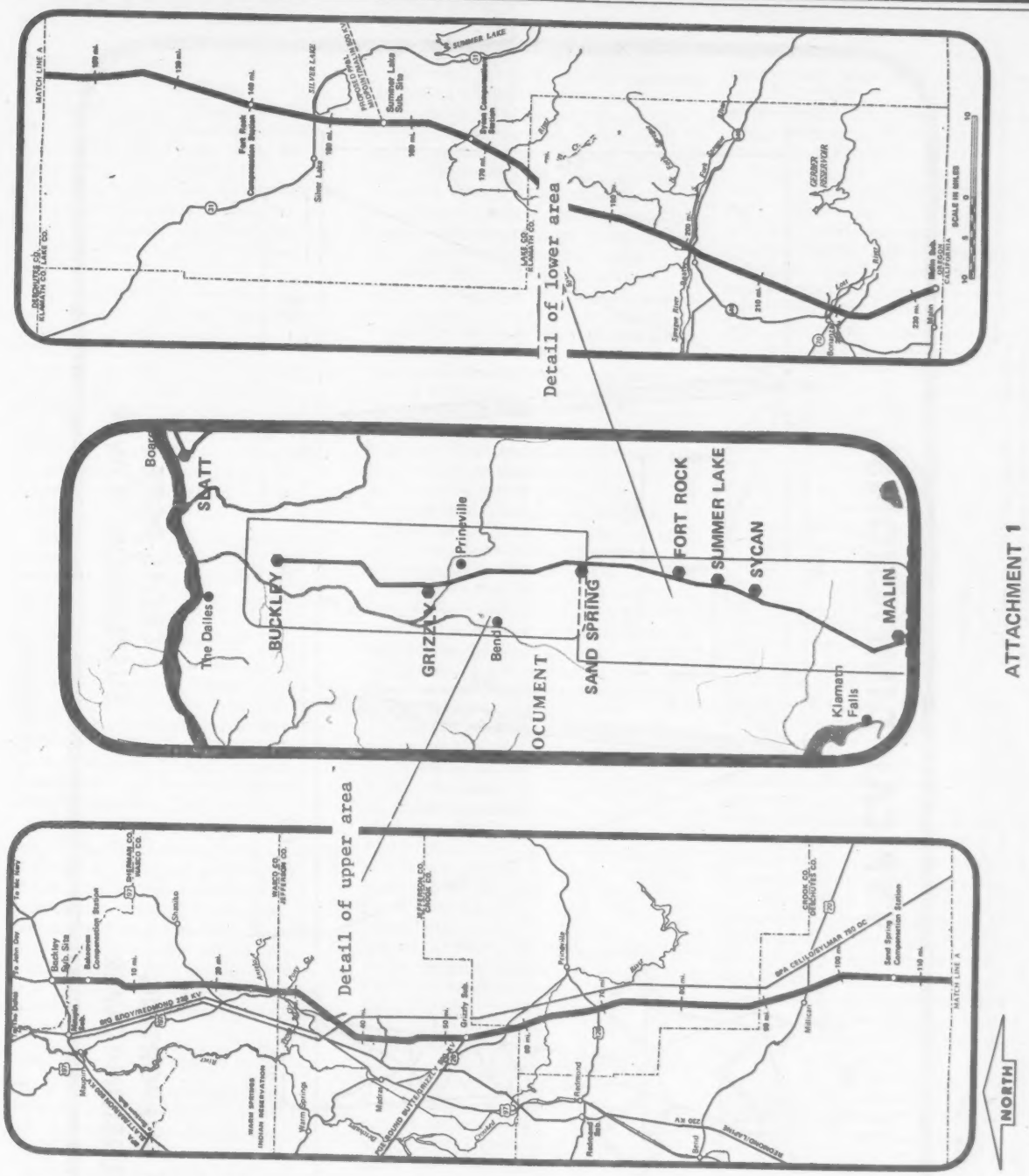

ATTACHMENT 1

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The line will utilize two types of transmission towers, lattice steel "delta" configuration self-supporting suspension towers and cross-rope suspension towers (Attachment 2). Where self-supporting structures are used, 77.5 feet of right-of-way easement will be acquired. Where cross-rope towers are used (23 miles) an additional 150 feet of right-of-way easement will be acquired. At cross-rope tower sites an additional easement of 220 feet (200 feet in length) will be acquired.

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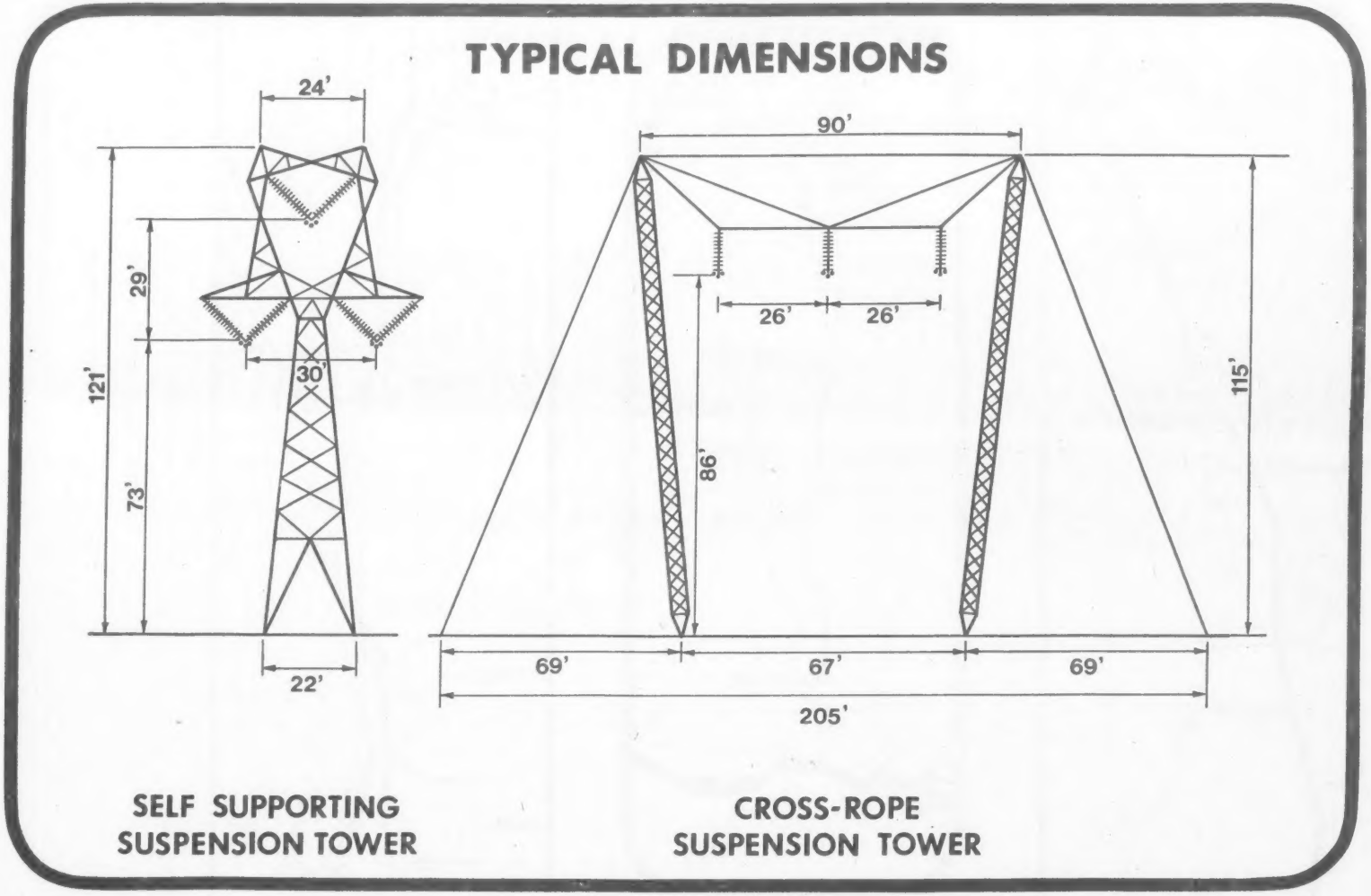

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ATTACHMENT 2

Only minor access road construction and improvement will be required, as the roads acquired or constructed for the two existing lines will serve the new line over most of the route.

Approximately 10 acres of land will be acquired for the Buckley Substation. About 3,000 feet of access road will be developed. Although full site development at Buckley Substation will be completed initially, installation of electrical equipment will be minimal. Full development of the substation will not occur for several years.

Bonneville will develop the Summer Lake Substation during the same time period as the transmission line. The site is located ¼ mile north of the intersection of PP&L's Midpoint-Malin Line and the AC Intertie lines. The Summer Lake station will occupy a 35-acre site. In order to provide access to this site, about 8 miles of existing U.S. Forest Service access road will be upgraded and about 0.5 mile of new road will be constructed.

The total estimated cost for the project is $48.0 million. The Buckley-Summer Lake line is estimated to cost $35.8 million. Buckley and Summer Lake Substations are estimated to cost $7.4 and $4.8 million respectively.

Once constructed, Bonneville will operate and maintain these facilities. Maintenance actions such as routine and emergency repairs to electrical equipment within the substations and to the transmission line, and vegetation management, will ensure continued reliable operation.

Maintenance activities for Bonneville's transmission lines are being analyzed in a separate environmental impact statement on Bonneville's maintenance program. Vegetation management for the Buckley-Summer Lake transmission line will be very infrequent since growth rates are very slow in this area and few species will grow high enough to become a hazard to the line.

Description of Alternatives

The alternatives considered by Bonneville in reaching its decision were:

1. Nonconstruction Alternatives.
   a. No Action.
   b. Energy Conservation and Load Management.
2. Construction Alternatives.
   a. Transmission Line Route Alternatives.
   b. Transmission Line Design Alternatives.
   c. Substation Location Alternatives.
   d. Substation Design Alternatives.

Basis of Decision

The existing transmission system will not be adequate to meet requirements by the early 1980's. Bonneville evaluated several alternative solutions to this problem. Plans for several alternate combinations of transmission line additions were evaluated and discussed within the Southwest Oregon Service planning EIS (DOE/EIS–0005–FS–2) and a decision to upgrade the transmission system was subsequently made. Each of these alternatives analyzed in the planning EIS required the Buckley-Summer Lake transmission line; thus this facility is common to all known transmission construction alternatives.

Two nonconstruction options were evaluated. The first of these is the no action alternative. If the Buckley-Summer Lake line is not constructed, the electric utilities in the affected areas, primarily PP&L and BPA, will not be able to supply their load adequately. Local power deficits may result in brownouts or blackouts under certain system outage conditions. The lack of sufficient transmission caspacity to deliver power to these areas will prevent BPA from meeting some of its contractual commitments. BPA would be unable to serve its southern Idaho loads without purchase of power either within or adjacent to that region. No such power source (surplus to other utilities' needs) appears to be available.

After PP&L's Midpoint-Malin-Medford line is constructed, southern Oregon loads will be served adequately as long as the line is interconnected at Malin. However, because of this interconnection, an outage of the Midpoint-Malin section would result in a reduction of Intertie transfer capacity, since the Intertie would then be used to serve southern Oregon loads. The overall reliability of the Pacific Northwest/Pacific Southwest power system could be severely weakened. Construction of the Buckley-Summer Lake line would maintain Intertie transfer capability while providing backup to southern Oregon service as well as providing for future service to BPA central Oregon loads.

The other nonconstruction alternative considered was energy conservation and load management. Bonneville and other Northwest utilities have embarked on a multifaceted energy conservation program. Although these efforts are expected to reduce energy consumption, they will not forestall the need for the Buckley-Summer Lake line or fulfill the purposes and needs for which this facility is proposed.

The above considerations led to the decision that construction of the Buckley-Summer Lake project was the best solution. The location and design of the transmission line as well as the Buckley and Summer Lake Substations received consideration in the location phase EIS (DOE/EIS–005–FS). The bases of the location and design decisions are summarized below.

Only a parallel transmission line route was considered for the Buckley-Summer Lake transmission line. It is Bonneville's policy to avoid creating new transmission line corridors by placing new lines adjacent to existing lines or replacing lower-voltage lines with larger ones when possible. An existing 500-kV transmission line corridor extended the full distance between the proposed terminals of the Buckley-Summer Lake line. Environmental studies conducted by Bonneville staff uncovered no environmental conditions which warranted the analysis of a new and less environmentally sensitive route. Significant environmental benefits such as reduced access road requirements, reduced right-of-way clearing, and comparatively less visual and ecological impact were attributed to a parallel location. Consequently no alternative transmission line routes were evaluated.

The transmission line structures which will be used on the line are of two basic types. The self supporting tower design (illustrated in Attachment 2) is a standard BPA 500-kV design. This structure requires a particularly narrow right-of-way. It was designed for use where existing low-voltage lines are removed and replaced with a 500-kV line on the same right-of-way. This design will be used for most of the line.

Newly designed transmission structures referred to as "cross-rope" structures will be used between miles 40 and 63 of the line. Economics and research motives were primary factors in this decision. The design was developed by the electric power industry to reduce transmission structure costs. It requires only four towers per mile as compared to five for conventional towers. Bonneville decided to utilize these structures on a portion of its line in order to gain experience with this design. Resource conservation benefits will also occur, as steel requirements are reduced. Tower visibility will also be lower, with the use of fewer and smaller members.

Decisions on location of the Buckley and Summer Lake Substations were restricted due to necessary interconnections with existing transmission lines. Three alternative sites were evaluated for Buckley Substation. After extensive discussions with landowners, a site was selected which was most acceptable tol the

landowners and would minimize impacts to farm operations. Where possible, transmission towers in the vicinity of the substation were placed on rocky outcroppings which were unsuitable for crops. The access road was rerouted to minimize its impact on tillable land. Bonneville has decided to install a gas-insulated station at Buckley in order to keep the size of the site to a minimum. This type of station requires one-third the acreage of a conventional air-insulated station.

The site selected for Summer Lake Substation is located near the junction of PP&L's new Midpoint-Malin line and the existing transmission line corridor which the Buckley-Summer Lake line will follow. Environmental conditions are fairly homogenous in the area. The availability of an existing access road to the site was a major factor in its selection. Bonneville's proposal to locate a substation at this site did not elicit any public comment.

The Summer Lake Substation will be an air-insulated substation designed to minimize the need for plowing snow inside the substation. This reduces the need for paving inside the substation and minimizes the impact of construction at the site. A gas-insulated substation was found to be impractical because of weather conditions.

Providing access for construction and maintenance of the transmission line will require less than 1 mile of new road construction and improvement of about 2 miles of existing roads outside of the right-of-way. Most of the route will be served by roads acquired or constructed for the two existing lines. Buckley Substation will require the construction of about 3,000 feet of access road. Summer Lake Substation will require upgrading of about 8 miles of existing forest service access road, and about 2,500 feet of new access road.

Environmentally Preferred Alternative

Bonneville defines the "environmentally preferred alternative" as that alternative which best meets the purposes of NEPA Section 101. The provisions of NEPA Section 101 direct agencies of the Federal Government to use all practicable means, consistent with other essential considerations of national policy, to conduct their actions in a manner that:

1. Fullfills the responsibilities of each generation as trustee of the environment for succeeding generations;
2. Assures for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings;
3. Attains the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
4. Preserves important historic, cultural, and natural aspects of our national heritage, and maintains, wherever possible, an environment which supports diversity, and variety of individual choice;
5. Achieves a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
6. Enhances the quality of renewable resources and approaches the maximum attainable recycling of depletable resources.

In response to these considerations, Bonneville determined that the selected alternative was environmentally preferable. Environmental studies concluded that a parallel transmission line route would have the least environmental impact. Therefore, no alternative routes were evaluated. Selection of the environmentally preferred alternative is thus based on comparison of Bonneville's proposal and the no action alternative.

Although the proposal results in adverse environmental effects, these are within established limits, and Bonneville's mitigation commitments establish adequate means by which to avoid or minimize environmental harm. Public review and comment on the project EIS did not uncover facts suggesting that unsatisfactory effects on public health, welfare or environmental quality would result from the Buckley Summer Lake project.

A number of beneficial impacts would result from this project. The proposal will assure reliable electrical service to customers of both PP&L and Bonneville in the affected areas. The proposed facilities will prevent brownouts or blackouts under certain outrage conditions as well as provide sufficient transmission capacity for Bonneville to meet its contractual commitments. The proposal also assures that transfer capability over the Pacific Northwest/Pacific Southwest Intertie is maintained while providing for future service to Central Oregon loads.

The proposed action thus assures environmental protection while attaining the widest range of beneficial uses of the environment. A balance is achieved between population and resources use that will permit high standards of living and a wide sharing of life's amenities.

The no action alternative, although avoiding the identified adverse impacts to the natural environment, would not provide the beneficial impacts attributatable to the proposal. With respect to the purposes of NEPA, as expressed in Section 101, the no action alternative does not attain the widest range of beneficial uses of the environmental nor does it achieve a balance between resources use that permits a high standard of living or a sharing of life's amenities.

On balance, it is Bonneville's conclusion that the environmentally preferred alternative is to have the line and its benefits.

Impact Mitigation and Monitoring Actions

All practicable means to avoid or minimize environmental harm have been adopted. As descriped in the final Buckley-Summer Lake EIS, Bonneville will take the following actions to minimize environmental impacts:

1. Bonneville will implement, through its contruction representatives and the construction contractor, the environmental quality protection provisions set forth in the Tranmission Engineering Standard Construction Specifications, 1978, Bonneville Power Administration, U.S. Department of Energy.
2. Bonneville, the course of its environmental studies, identified four historic sites and 37 archaeological sites along the transmission line which are potentially eligible for the National Register of Historic places. Site testing of the archaeological sites and consultation with the Oregon SHPO is still in progress. In the meantime Bonneville will take no actions having adverse effects on these archaeological sites. Where adverse impact cannot be avoided, mitigation and/or excavation actions will first be undertaken in accordance with Section 106 of the National Historic Preservation Act and with the guidance of the State Historic Preservation Officer.
3. In accordance with the Bonneville/U.S. Forest Service Memorandum of Understanding, a joint-project plan will be completed for line and facility locations on U.S. Forest Service lands. The plan will be prepared to develop the land-use grant and will assist in coordinating BPA contractor and Forest Service actions. A right-of-way management plan will be jointly prepared by the Forest Service and BPA prior to completion of construction. It will define methods to be used in right-of-way maintenance which protect the environment as well as assure operational realibility of the line.
4. Bonneville construction representatives will review soil erosion measures with local soil and water control districts.
5. Right-of-way clearing will be limited to that which is necessary to

construct the line and to assure its reliable operation.

6. To limit dust and localized air pollution, Bonneville will minimize soil disturbance, will limit the type of construction equipment and allowable speeds, will surface unpaved roads in sensitive areas with crushed rock and will comply with Oregon State Department of Environmental Quality (DEQ) regulations regarding slash disposal.

7. Vehicle access will be limited to specific work areas and designated roads. Activities such as road construction and grading will be kept to a minimum. Prior to the start of construction, an access road plan will be prepared which establishes a single travel route for use during construction. This plan will be incorporated in the construction specifications and enforced by Bonneville construction representatives.

8. Access roads will avoid steep slopes to the maximum extent possible and when not possible water bars will be installed and exposed soils seeded or stabilized by other appropriate methods.

9. Disposal of excess earth and rock will be limited to areas of minimum impact. Site approval will be made by Bonneville's construction representative and will follow Federal, State and local regulations as well as good environmental practices.

10. Crushed rock and other road and fill material will be obtained only from environmentally approved sites. Site approval will be made by Bonneville's construction representative and will follow Federal, State and local regulations as well as good environmental practices.

11. Construction in areas susceptable to high wind or water erosion would be timed to avoid seasonal periods of high wind or intense rain.

12. Impact on ecologically sensitive areas including wetland areas will be avoided by careful tower and access road locations. At a minimum, disturbance in such areas will be avoided immediately prior to spring run-off.

13. Construction schedules within the Crooked River National Grasslands (miles 40–63) will be coordinated with the Deschutes National Forest.

14. Access roads required in forested lands will follow cleared areas and removal of trees will be avoided to the extent practicable.

15. Construction activities will be limited in the vicinity of Silver Lake during the waterfowl and upland bird nesting which occurs during March, April, and May.

16. Construction across identified deer/antelope winter ranges near Silver Lake (miles 95–120) will be coordinated with the Lakeview District of the Oregon State Department of Game.

17. Footing installation and tower erection in the Prineville area will be completed between October and mid-February to reduce crop damage.

18. BPA or its contractor will cooperate with property owners to minimize crop and property damage. BPA or its contractors will pay fair compensation for damages incurred including modifications to sprinkler systems made necessary by tower locations.

19. Visual impacts to Antelope Creek, Pony Creek, and the Crooked River, will be minimized to the extent possible by selecting topographically screened tower locations and minimizing ground disturbance.

20. To minimize impacts to agricultural lands, transmission line towers will be placed at field edges or in uncultivated areas when practicable.

21. Roads previously used for logging or construction of the adjacent transmission line will be used whenever practicable to avoid additional ground disturbance.

22. If the new facilities cause television or radio interference, mitigation in accordance with Bonneville policy will be undertaken. Similiarly, if railroad or telephone interference are created, mitigation actions will be implemented.

23. Near Madras, Oregon, the transmission line is parallel to a pipeline. If necesary, Bonneville will utilize mitigation measures to minimize induced current in this pipeline.

24. In areas where ground disturbance causes an erosion problem, non-palatable species will be planted. Where practicable, grazing will be deferred for at least 3 years to enhance recovery.

The above provisions will be incorporated in Bonneville's construction specifications and enforced by Boneville's construction representatives as part of Bonneville's monitoring and enforcement program. A monthly project environmental progress report will describe the status of environmental mitigation measures. Periodic field inspections in sensitive areas will be made by BPA environmental specialists if determined to be appropriate.

Other Determinations

Floodplain determination—Bonneville, in response to Executive Order 11988—*Floodplain Management* and Department of Energy's *Compliance With Floodplain/Wetlands Environmental Review Requirements* (10 CFR 1022.15), evaluated in the draft and final EIS, the potential effects of the Buckley-Summer Lake project on floodplains. The transmission line crosses the Crooked River Valley at a point where the 100-year floodplain is narrow in width (about 350 feet). The transmission line will span both the river and the floodplain. As no transmission structures or access roads will be located within the floodplain, this is not a floodplain action within the meaning of DOE Floodplain/Wetland Environmental Review Requirements. Bonneville did; however, review in the final EIS the environmental impacts of crossing the floodplain. Visual impact on the area's scenic qualities was the primary impact. Use of an alternative route that would avoid crossing the floodplain would substantially increase the length of the line, significantly increase costs, and no doubt create impacts to other resources. For these reasons, Bonneville has determined that there is no practicable alternative to crossing the Crooked River floodplain.

Preservation of Farmlands—The Buckley-Summer Lake transmission line crosses farmlands in several locations, some of which are termed "prime and unique" by the U.S. Department of Agriculture. The Buckley Substation is located on wheatland. It is estimated that transmission tower bases may remove as much as 0.6 acres of prime and unique farmland from production. About 14.2 acres of agricultural land (not classified prime) would be converted to other use following construction of the Buckley Substation, the access road for Buckley Substation, and transmission tower bases.

The location and design of the Buckley Substation was coordinated with the landowner to minimize impact on agricultural uses. Several substation sites were evaluated. The use of these sites would have required construction of additional transmission line across farmlands. Transmission lines costs would also be greater. The selected site has the lowest overal effect on agriculture of those considered.

The Buckley-Summer Lake line follows an existing transmission line which crosses agricultural lands. Parallel location will reduce argicultural impacts. Careful tower placement will minimize disruption of agricultural operations.

The national interest is served both by preservation of agricultural lands as well as providing for electrical service. There are no practicable alternatives which would allow both of these interests to be served without conversion of that agricultural land

described above. All practicable means to minimize agricultural impacts have been adopted by Bonneville.

Rare and Endangered Species—Bonneville has consulted with the U.S. Fish and Wildlife Service (USFWS) pursuant to the Endangered Species Act of 1973. Bonneville prepared a biological assessment which concluded that the Buckley-Summer Lake project would have no impact on rare and endangered species. The USFWS concurred with Bonneville's biological assessment on April 18, 1980.

Wetlands Protection—The Buckley-Summer Lake transmission line will cross several marshy areas that are adjacent to slow moving rivers and streams. These wetland areas are linear in configuration and there is not practicable alternative to crossing them. Bonneville will avoid placing towers or access roads within wetlands.

Intergovernmental Cooperation—In accordance with the procedures outlined by the Office of Management and Budget (OMB) Circular No. A–95, Bonneville transmitted its draft and final environmental impact statements to involved Federal, State and local clearinghouses. It is Bonneville's determination that the Buckley-Summer Lake project is consistent and compatible with State, area and local development plans. This record of decision will be distributed to A–95 clearinghouses to notify them of actions to be taken.

Dated at Portland, Oregon, this 10th day of November, 1980.

Ray Foleen,

Acting Administrator.

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BILLING CODE 6450-11-M